**Earth’s Spheres Webquest** Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Block\_\_

**Part 1:** [**How Are Earth's Spheres Interacting?**](https://www.classzone.com/books/earth_science/terc/content/investigations/es0103/es0103page01.cfm?chapter_no=investigation) **Keycode: ES0103**

**Go to Exploring Earth Website:** [**http://bit.ly/2buDz0z**](http://bit.ly/2buDz0z)

1. Looking at the image, what are the major parts of our planet that can interact as a system?

2. Describe each of Earth's four spheres. List several examples of features in each sphere.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Sphere | Geosphere | Hydrosphere | Atmosphere | Biosphere |
| Description |  |  |  |  |
| Examples  |  |  |  |  |

3. Do you think clouds should be classified as part of the atmosphere, or part of the hydrosphere? Explain why.

4. How do the spheres interact? Name the spheres that are interacting in each scenario.

Example: Plants get carbon dioxide from the air: Biosphere (plants) + Atmosphere (CO2)

1. Lichen use chemicals to wear down rocks for food:
2. Plants take up minerals from the soil:

5. How do the spheres interact? Give an example for each type of interaction.

Example: Biosphere + Geosphere: Humans (Biosphere) built a dam out of rock materials (Geophere)

1. Geosphere + Hydrosphere:
2. Hydrosphere + Atmosphere:

6. List some Earth sphere interactions that result from your own daily activities.

A.

B.

7. Describe some human activities that are contributing to global-scale interactions among Earth's spheres.

A.

B.

8. What is Earth System Science? (the link may not work, so use your own experience)

**Part 2: NASA – A Year in the Life of Earth’s CO2**

**Go to:** [**http://bit.ly/2biVQ0b**](http://bit.ly/2biVQ0b)

Watch the video by NASA An ultra-high-resolution NASA computer model has given scientists a stunning new look at how carbon dioxide in the atmosphere travels around the globe.

1. Describe how the biosphere and the atmosphere interact in this video?

2. Watch South America “pulse” during January, February, and March (The date is listed at the bottom). Why is the amount of carbon dioxide in south America fluctuating like this?

**Part 3:** [**How Do Interactions among Earth's Spheres Vary Regionally?**](https://www.classzone.com/books/earth_science/terc/content/investigations/es0108/es0108page01.cfm?chapter_no=investigation) **Keycode: ES0108
Go to Exploring Earth Website:** [**http://bit.ly/2buDz0z**](http://bit.ly/2buDz0z)

1. For each location, tell how you think the crops get their water. What Earth system processes can be inferred at each location? (Page 1)

2. Which of the two images more closely represents how crops receive water near your home? Is the hydrosphere abundant or scarce at your location? (Page 1)

3. How does the geosphere affect the biosphere in each of these places? Describe interactions between the **geosphere** and the **biosphere** for each image. (Page 2)

4. Describe interactions between humans and the geosphere illustrated by the images. (Page 3)

5. In your region, what materials do humans take from the geosphere? What materials are returned to it? (Page 3)

6. Describe differences in interactions between the hydrosphere and the geosphere illustrated by these images. (Page4)

7. What is the Leaf Area Index for your own region in the image? (Page 6)

8. Describe interactions among the biosphere, hydrosphere, and atmosphere indicated for your region by this image. (Page 6)